CLAIMS

1. Direct injection internal combustion engine having

   NOx-reducing exhaust-gas aftertreatment,

   internal exhaust-gas recirculation,

   layered lean operation and

   swirl in the incoming fresh gas,

   having a swirl axis running substantially transverse to the piston movement **characterized in that** due to charging an intermixture of the residual exhaust-gas portion with the fresh air drawn in takes place.

2. Internal combustion engine according to Claim 1, **characterized in that** the swirl is a tumble movement.

3. Internal combustion engine according to Claim 1 or 2, **characterized in that** the swirl is produced by a tumble plate in the intake channel.

4. Internal combustion engine according to any of the preceding claims, **characterized in that** it is ignited externally and is an Otto engine.

5. Internal combustion engine according to any of the preceding claims, **characterized in that** a layer charging operation is provided.

6. Internal combustion engine according to any of the preceding claims, **characterized in that** it additionally has external exhaust-gas recirculation.

7. Internal combustion engine according to Claim 5, **characterized in that** the external exhaust-gas recirculation is cooled and/or provided with a control valve.

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8. Internal combustion engine according to any of the preceding claims, **characterized in that** the swirl axis lies in the region of 75° to 105° of the piston movement.

9. Internal combustion engine according to any of the preceding claims, **characterized in that** exhaust-gas aftertreatment takes place by means of a NOx storage catalyst.

10. Internal combustion engine according to any of the preceding claims, **characterized in that** exhaust-gas aftertreatment is controlled by a NOx sensor.

11. Internal combustion engine according to any of the preceding claims, **characterized in that** internal exhaust-gas recirculation takes place by adjustment of intake valve opening times in the direction of early.

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